

\*\*\*\*\*  
 FILE 'USPAT' ENTERED AT 13:55:42 ON 23 DEC 1997

\*\*\*\*\*  
 \* WELCOME TO THE \*  
 \* U. S. PATENT TEXT FILE \*  
 \*\*\*\*\*

=> s onagi, nobuaki/in  
 L1 8 ONAGI, NOBUAKI/IN

=> display ll  
 ENTER ANSWER NUMBER OR RANGE (1):1-8  
 ENTER DISPLAY FORMAT (CIT):cit

1. 5,681,633, Oct. 28, 1997, Magneto optical disc, apparatus for reproducing the same and method of reproducing the same; **Nobuaki Onagi**, et al., 428/64.3; 360/58, 114; 365/122; 369/275.2, 275.3; 428/611, 615, 621, 635, 668, 670, 694EC, 694IS, 694LE, 694ML, 694MM, 694SC, 900 :IMAGE AVAILABLE:

2. 5,617,406, Apr. 1, 1997, Optical disc with heat blocking bands between tracks; **Nobuaki Onagi**, et al., 369/275.3, 275.4, 275.5 :IMAGE AVAILABLE:

3. 5,592,445, Jan. 7, 1997, Exchange coupling optical recording medium and recording/reproducing device therefor; **Nobuaki Onagi**, 369/13; 360/59 :IMAGE AVAILABLE:

4. 5,452,273, Sep. 19, 1995, Optical recording method and apparatus therefor; **Nobuaki Onagi**, 369/13; 360/59 :IMAGE AVAILABLE:

5. 5,448,552, Sep. 5, 1995, Super resolution information reproduction by tracking address information in normal resolution; **Nobuaki Onagi**, 369/275.4; 360/59; 369/13, 275.3 :IMAGE AVAILABLE:

6. 5,382,460, Jan. 17, 1995, Optical recording disk and production process therefor; **Nobuaki Onagi**, et al., 428/64.4; 346/135.1; 347/264; 428/457, 913; 430/945 :IMAGE AVAILABLE:

7. 5,217,850, Jun. 8, 1993, Optical recording disk and manufacturing method thereof; Seiro Fujii, et al., 430/321; 369/282; 428/64.4; 430/270.11, 945 :IMAGE AVAILABLE:

8. 5,087,340, Feb. 11, 1992, Method of making magneto-optical recording disk; **Nobuaki Onagi**, et al., 204/192.2, 192.16, 192.22, 192.26; 428/694ML, 694R, 698 :IMAGE AVAILABLE:

=> s track? and (pit or pits) and record?  
 179624 TRACK?  
 14126 PIT  
 10250 PITS  
 257609 RECORD?  
 L2 3956 TRACK? AND (PIT OR PITS) AND RECORD?

=> s address pit? and optic?  
 115053 ADDRESS  
 138391 PIT?  
 90 ADDRESS PIT?  
 (ADDRESS(W)PIT?)  
 282262 OPTIC?  
 L3 79 ADDRESS PIT? AND OPTIC?

=> s 12 and 13  
 L4 76 L2 AND L3

=> s 11 and 14  
 L5 2 L1 AND L4

=> display l5  
 ENTER ANSWER NUMBER OR RANGE (1):1-2  
 ENTER DISPLAY FORMAT (CIT):cit

1. 5,681,633, Oct. 28, 1997, Magneto **optical** disc, apparatus for

reproducing the same and method of reproducing the same; **Nobuaki Onagi**, et al., 428/64.3; 360/58, 114; 365/122; 369/275.2, 275.3; 428/611, 615, 621, 635, 668, 670, 694EC, 694IS, 694LE, 694ML, 694MM, 694SC, 900 :IMAGE AVAILABLE:

2. 5,448,552, Sep. 5, 1995, Super resolution information reproduction by **tracking** address information in normal resolution; **Nobuaki Onagi**, 369/275.4; 360/59; 369/13, 275.3 :IMAGE AVAILABLE:

```
=> s pit density
      14126 PIT
      317693 DENSITY
L6      139 PIT DENSITY
      (PIT(W)DENSITY)
```

```
=> s 12 and 16
L7      22 L2 AND L6
```

```
=> s 17 and 369/clas
      24339 369/CLAS
L8      19 L7 AND 369/CLAS
```

```
=> s address (2w) pit?
      115053 ADDRESS
      138391 PIT?
L9      182 ADDRESS (2W) PIT?
```

```
=> s 19 and 18
L10     1 L9 AND L8
```

```
=> display 110
ENTER ANSWER NUMBER OR RANGE (1):1
ENTER DISPLAY FORMAT (CIT):cit
```

1. 5,448,552, Sep. 5, 1995, Super resolution information reproduction by **tracking** address information in normal resolution; **Nobuaki Onagi**, 369/275.4; 360/59; 369/13, 275.3 :IMAGE AVAILABLE:

```
=> s super(w)resolution and optic? and record? and land and groove
      35724 SUPER
      100991 RESOLUTION
      154 SUPER(W)RESOLUTION
      282262 OPTIC?
      257609 RECORD?
      47376 LAND
      258144 GROOVE
L11     25 SUPER(W)RESOLUTION AND OPTIC? AND RECORD? AND LAND AND GROO
VE
```

```
=> s 111 and density
      317693 DENSITY
L12     25 L11 AND DENSITY
```

```
=> s 19 and 112
L13     6 L9 AND L12
```

```
=> s address (p) adjacent
      115053 ADDRESS
      896027 ADJACENT
L14     7497 ADDRESS (P) ADJACENT
```

```
=> s 112 and 114
L15     6 L12 AND L14
```

```
=> s 113 or 115
L16     8 L13 OR L15
```

```
=> display 116
ENTER ANSWER NUMBER OR RANGE (1):1-8
ENTER DISPLAY FORMAT (CIT):cit
```

1. 5,673,250, Sep. 30, 1997, **Optical recording** medium having pit rows on every other boundary and reproducing method thereof; **Michinobu Mieda**, et al., 369/275.4, 32, 58, 100, 277 :IMAGE AVAILABLE:

2. 5,645,978, Jul. 8, 1997, Method for manufacturing **optical** disk;  
Tetsuya Inui, et al., 430/321; 205/68, 70; 264/106; 430/322, 325, 329  
:IMAGE AVAILABLE:

3. 5,615,205, Mar. 25, 1997, Bi-level **optical** media having embossed  
header format; Karl Belser, 369/275.4, 275.3 :IMAGE AVAILABLE:

4. 5,499,229, Mar. 12, 1996, Track scanning for reproducing address  
information by crosstalk; Yoshiteru Murakami, et al., 369/111, 13, 44.26,  
275.3, 275.4 :IMAGE AVAILABLE:

5. 5,481,530, Jan. 2, 1996, High **density optical recording**  
method and **recording** medium; Chiga Ueda, et al., 369/275.1, 112  
:IMAGE AVAILABLE:

6. 5,448,552, Sep. 5, 1995, **Super resolution** information  
reproduction by tracking address information in normal resolution;  
Nobuaki Onagi, 369/275.4; 360/59; 369/13, 275.3 :IMAGE AVAILABLE:

7. 5,422,874, Jun. 6, 1995, **Optical recording** disk, and  
**recording/reading** apparatus using same; Masahiro Birukawa, et al.,  
369/275.2, 275.4 :IMAGE AVAILABLE:

8. 5,383,176, Jan. 17, 1995, **Optical** disk; Tetsuya Inui, et al.,  
369/275.4, 275.1 :IMAGE AVAILABLE:

=> d his

(FILE 'USPAT' ENTERED AT 13:55:42 ON 23 DEC 1997)

```
L1      8 S ONAGI, NOBUAKI/IN
L2      3956 S TRACK? AND (PIT OR PITS) AND RECORD?
L3      79 S ADDRESS PIT? AND OPTIC?
L4      76 S L2 AND L3
L5      2 S L1 AND L4
L6      139 S PIT DENSITY
L7      22 S L2 AND L6
L8      19 S L7 AND 369/CLAS
L9      182 S ADDRESS (2W) PIT?
L10     1 S L9 AND L8
L11     25 S SUPER(W)RESOLUTION AND OPTIC? AND RECORD? AND LAND AND G
ROO
L12     25 S L11 AND DENSITY
L13     6 S L9 AND L12
L14     7497 S ADDRESS (P) ADJACENT
L15     6 S L12 AND L14
L16     8 S L13 OR L15
```

=> file jpoab

FILE 'JPOABS' ENTERED AT 14:09:48 ON 23 DEC 1997

```
* * * * *
*   J A P A N E S E   P A T E N T   A B S T R A C T S   *
*
* CURRENTLY, DATA IS LOADED THROUGH THE ABSTRACT PUBLICATION *
* DATE OF NOVEMBER 1996. *
* THE LATEST GROUPS RECEIVED ARE: PAJ547 & PAJ548. *
* * * * *
```

=> s 14

```
53591 TRACK?
7710 PIT
2887 PITS
248838 RECORD?
85449 ADDRESS
53774 PIT?
60 ADDRESS FIT?
  (ADDRESS(W)PIT?)
229610 OPTIC?
L17     26 L2 AND L3
```

=> s 114 and 117

85449 ADDRESS

61340 ADJACENT  
779 ADDRESS (P) ADJACENT  
L18 4 L14 AND L17

=> s 19 and 118

85449 ADDRESS  
53774 PIT?  
83 ADDRESS (2W) PIT?  
L19 4 L9 AND L18

=> display 119

ENTER ANSWER NUMBER OR RANGE (1):1-4  
ENTER DISPLAY FORMAT (CIT):all

07-153081 Jun. 16, 1995 L19: 1 of 4  
OPTICAL DISC AND METHOD FOR REPRODUCING THE DISC

INVENTOR: YOSHITERU MURAKAMI, et al. (2)  
ASSIGNEE: SHARP CORP  
APPL NO: 05-301500  
DATE FILED: Dec. 1, 1993  
PATENT ABSTRACTS OF JAPAN  
ABS GRP NO:  
ABS VOL NO:  
ABS PUB DATE:  
INT-CL: G11B 7/007; G11B 7/24; G11B 11/10; G11B 11/10; G11B 27/10

ABSTRACT:

PURPOSE: To obtain correct address data.

CONSTITUTION: In the **optical** disc, data are **recorded**/reproduced both by grooves and by lands of guide **tracks** for guiding light beams. A width of the groove 1 and a width of the land 2 between the grooves 1 and 1 are set to be approximately equal to each other. Projecting and recessed **pits** where **address** data are **recorded** are shifted in a circumferential direction in the **adjacent** grooves (4a and 4b). When a light spot 6 scans on the land, **address** data are obtained from a crosstalk between the **address pits** 4a and 4b. Accordingly, it is not necessary to form **address pits** both at the grooves and at the lands. Since the **pits** 4a and 4b are shifted, no crosstalk is brought about when the **pits** 4a, 4b are reproduced to obtain **address** data.

COPYRIGHT: (C)1995,JPO

02-260250 Oct. 23, 1990 L19: 2 of 4  
OPTICAL DISK

INVENTOR: MASAMI SHIMAMOTO, et al. (4)  
ASSIGNEE: MITSUBISHI ELECTRIC CORP, et al. (90)  
APPL NO: 01-81865  
DATE FILED: Mar. 31, 1989  
PATENT ABSTRACTS OF JAPAN  
ABS GRP NO: F1153  
ABS VOL NO: Vol. 15, No. 19  
ABS PUB DATE: Jan. 16, 1991  
INT-CL: G11B 7/24; G11B 7/00

ABSTRACT:

PURPOSE: To surely detect a clock **pit** and/or **address pit** even when an **optical** spot moves between **tracks** by forming **pits** between **adjacent** clock **pits** and between **address pits** **adjacent** in the diameter direction of **tracks**.

CONSTITUTION: **Pits** P.sub.1, P.sub.2 are formed at least one of an interval between clock **pits** CLP and between **address pits** ADP **adjacent** in the diameter direction of **tracks** T. When an **optical** spot moves on the **tracks** T, the clock **pits** CLP and the **address pits** ADP on the **tracks** T are detected. When the **optical** spot moves between **tracks** T, **pits** between the clock **pits** CLP and/or between **address pits** ADP **adjacent** in the

diameter direction of the **tracks** T are detected. Even when the **optical** spot moves between **tracks**, signals corresponding to the clock **pits** and one of two **address pits** are surely obtained, the frequency and phase of a reference clock are not disturbed and information for an **optical** disk can be highly accurately **recorded** and reproduced.

02-199636

Aug. 8, 1990

L19: 3 of 4

**OPTICAL DISK AND OPTICAL DISK DRIVER**

INVENTOR: RYUICHIRO ARAI, et al. (4)  
ASSIGNEE: MITSUBISHI ELECTRIC CORP  
APPL NO: 01-18411  
DATE FILED: Jan. 27, 1989  
PATENT ABSTRACTS OF JAPAN  
ABS GRP NO: F1122  
ABS VOL NO: Vol. 14, No. 490  
ABS PUB DATE: Oct. 25, 1990  
INT-CL: G11B 7/24; G11B 7/085

**ABSTRACT:**

**PURPOSE:**To detect the direction even during high speed accessing and to improve the resolution of **track** count and **track** density by shifting address information of a **track** one by one for M-**track** each and **recording** the information with an **address pit** of a pattern changing repetitively at a period of N blocks.

**CONSTITUTION:**A pattern of **address pits** 4,5 formed on a **track** is selected to be K bits having two significant bits with nonsignificant bits inbetween. Then M **tracks** are used as one block, the information is changed for each block for a period of N blocks and a pattern between the 1st block and the N-th block between **adjacent** blocks and periods is **recorded** while one of the 2 significant bits is being shifted by one. That is, the significant bit between the 1st and the last blocks between **adjacent** blocks and periods is only deviated by one bit. Thus, the accessing is fast, a change in the pattern is less and the direction of the **track** is surely detected, and the **track** count resolution is improved and also the **track** density is improved.

61-220135

Sep. 30, 1986

L19: 4 of 4

**OPTICAL DISC RECORDING CARRIER**

INVENTOR: TAKASHI TAKEUCHI, et al. (5)  
ASSIGNEE: HITACHI LTD  
APPL NO: 60-60569  
DATE FILED: Mar. 27, 1985  
PATENT ABSTRACTS OF JAPAN  
ABS GRP NO: P549  
ABS VOL NO: Vol. 11, No. 56  
ABS PUB DATE: Feb. 20, 1987  
INT-CL: G11B 7/007; G11B 7/24

**ABSTRACT:**

**PURPOSE:**To uniform the influence of the resistance to the flow of a resin at the molding time by arranging preformat parts indicating **address** information on a substrate so that they are not arranged in parallel between **adjacent tracks**.

**CONSTITUTION:**When **address pits** are arranged in the radial direction on an **optical** disc, the disturbance of flow of the resin generated in the **address pit** part on the t-th **track** has an influence upon the **address pit** part on the (t+1)th **track** and the transfer capacity of a stamper of the **address pit** is different between the inner peripheral side and the outer peripheral side as the whole. If positions of preformat parts 7 are shifted from one another in the **track** direction by, for example, a 1/12 circumference, preformat parts 7 are not arranged in parallel between **adjacent tracks** to uniform the resistance to the flow of the resin at the molding time as the whole of the disc surface. Thus, the transfer capacity for molding is improved to attain the structure of the

optical disc superior in mass productivity.

=> file epo

FILE 'EPO' ENTERED AT 14:11:09 ON 23 DEC 1997

```

*****
*                               G P I                               *
*   EUROPEAN PATENT ABSTRACTS   *
*****

```

=> d his

```

(FILE 'USPAT' ENTERED AT 13:55:42 ON 23 DEC 1997)
L1      8 S ONAGI, NOBUAKI/IN
L2      3956 S TRACK? AND (PIT OR PITS) AND RECORD?
L3      79 S ADDRESS PIT? AND OPTIC?
L4      76 S L2 AND L3
L5      2 S L1 AND L4
L6      139 S PIT DENSITY
L7      22 S L2 AND L6
L8      19 S L7 AND 369/CLAS
L9      182 S ADDRESS (2W) PIT?
L10     1 S L9 AND L8
L11     25 S SUPER(W)RESOLUTION AND OPTIC? AND RECORD? AND LAND AND G
ROO
L12     25 S L11 AND DENSITY
L13     6 S L9 AND L12
L14     7497 S ADDRESS (P) ADJACENT
L15     6 S L12 AND L14
L16     8 S L13 OR L15

```

```

FILE 'JPOABS' ENTERED AT 14:09:48 ON 23 DEC 1997
L17     26 S L4
L18     4 S L14 AND L17
L19     4 S L9 AND L18

```

FILE 'EPO' ENTERED AT 14:11:09 ON 23 DEC 1997

=> s 119

```

15047 ADDRESS
16784 PIT?
11 ADDRESS (2W) PIT?
15047 ADDRESS
137925 ADJACENT
355 ADDRESS (P) ADJACENT
41314 TRACK?
1705 PIT
878 PITS
61433 RECORD?
15047 ADDRESS
16784 PIT?
8 ADDRESS PIT?
      (ADDRESS(W)PIT?)
89800 OPTIC?
L20     1 L9 AND L18

```

=> display 120

ENTER ANSWER NUMBER OR RANGE (1):1  
 ENTER DISPLAY FORMAT (CIT):all

EF000656625A1 Jun. 7, 1995 L20: 1 of 1  
 Optical disk and method for reproducing information recorded on  
 the same.

INVENTOR: MURAKAMI, YOSHITERU (JP)  
 TAKAHASHI, AKIRA (JP)  
 OHTA, KENJI (JP)  
 APPLICANT: SHARP KK (JP)  
 APPL NO: EP 94308870  
 DATE FILED: Nov. 30, 1994  
 PRIOR-AP: JP,30150093A Dec. 1, 1993  
 INT-CL: :6: G11B11/10; :6: G11B7/007  
 EUR-CL: G11B7/007; G11B7/09; G11B11/10; G11B11/10

## ABSTRACT:

On an **optical disk**, information is **recorded** on both grooves and lands as guide **tracks** for guiding a light beam. The width of each groove and that of each land are set substantially equal to each other. A plurality of series of **pits** representing **address** information are formed in the grooves so that the series of **pits** in a groove and the series of **pits** in the **adjacent** grooves are located in different radial directions of the **optical disk**. **Address pits** are not formed in any of the **tracks** formed by the lands. When the light beam scans the **track** on the land, the **address** information is obtained by crosstalk of the series of **address pits** formed in the **track** on the groove. This structure enables the management of the addresses of **tracks** having thereon no **address pits**. When obtaining the **address** information by reproducing the series of **address pits** on the groove, since no crosstalk occurs, accurate **address** information is obtained. <IMAGE>

=> d his

(FILE 'USPAT' ENTERED AT 13:55:42 ON 23 DEC 1997)  
L1 8 S ONAGI, NOBUAKI/IN  
L2 3956 S TRACK? AND (PIT OR PITS) AND RECORD?  
L3 79 S ADDRESS PIT? AND OPTIC?  
L4 76 S L2 AND L3  
L5 2 S L1 AND L4  
L6 139 S PIT DENSITY  
L7 22 S L2 AND L6  
L8 19 S L7 AND 369/CLAS  
L9 182 S ADDRESS (2W) PIT?  
L10 1 S L9 AND L8  
L11 25 S SUPER(W)RESOLUTION AND OPTIC? AND RECORD? AND LAND AND G  
ROO  
L12 25 S L11 AND DENSITY  
L13 6 S L9 AND L12  
L14 7497 S ADDRESS (P) ADJACENT  
L15 6 S L12 AND L14  
L16 8 S L13 OR L15

FILE 'JPOABS' ENTERED AT 14:09:48 ON 23 DEC 1997  
L17 26 S L4  
L18 4 S L14 AND L17  
L19 4 S L9 AND L18

FILE 'EPO' ENTERED AT 14:11:09 ON 23 DEC 1997  
L20 1 S L19

=> logoff

ALL L# QUERIES AND ANSWER SETS ARE DELETED AT LOGOFF

LOGOFF? (Y)/N/HOLD:y

U.S. Patent & Trademark Office LOGOFF AT 14:11:56 ON 23 DEC 1997

=> display acc 4164788 4917462 5121378 5199022 5371722 5383176

MORE? (END):end

ENTER DISPLAY FORMAT (CIT):cit

1. 4,164,788, Aug. 14, 1979, Super-resolution imaging system; Atul Jain, 382/280; 348/625; 364/525, 576; 365/167; 382/299 [IMAGE AVAILABLE]
2. 4,917,462, Apr. 17, 1990, Near field scanning optical microscopy; Aaron Lewis, et al., 359/368; 250/216; 359/558, 894 [IMAGE AVAILABLE]
3. 5,121,378, Jun. 9, 1992, Optical head apparatus for focussing a minute light beam spot on a recording medium; Yutaka Hirose, et al., 369/112, 44.12, 118 [IMAGE AVAILABLE]
4. 5,199,022, Mar. 30, 1993, Disk having data memorizing portion including land-shaped and groove-shaped areas, and writing/reading apparatus for the same; Katsumi Suzuki, et al., 369/275.1; 360/59, 114; 365/122; 369/13 [IMAGE AVAILABLE]
5. 5,371,722, Dec. 6, 1994, Method for recording sector control information on magneto-optical disk; Shunji Yoshimura, et al., 369/13; 360/29 [IMAGE AVAILABLE]
6. 5,383,176, Jan. 17, 1995, Optical disk; Tetsuya Inui, et al., 369/275.4, 275.1 [IMAGE AVAILABLE]

=> logoff

ALL L# QUERIES AND ANSWER SETS ARE DELETED AT LOGOFF  
LOGOFF? (Y)/N/HOLD:y

U.S. Patent & Trademark Office LOGOFF AT 11:01:35 ON 29 JAN 1998